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| 10/730,629 | 12/08/2003 | Bhashyam Ramesh | 11141 | 4241 |

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| EXAMINER | |
|---|---|
| NELSON, FREDA ANN | |
| ART UNIT | PAPER NUMBER |
| 3628 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/730,629 | RAMESH ET AL. | |
| | Examiner | Art Unit | |
| | Freda A. Nelson | 3628 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

This is in response to a letter for a patent filed December 8, 2003 in which claims 1–56 were presented for examination. Claims 1-56 are pending.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1, 15, and 28 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The examiner believes:

creating one or more predicates, each predicate referencing one or more relations;

identifying the relations in the request; identifying one or more access paths for each relation;

extracting the predicates from the request; for each predicate, associating the predicate with the one or more access plans identified for the one or more relations referenced in the predicate;

estimating the cost of one or more access paths associated with the predicate; and for each access path, selecting the cheaper of the estimated access path cost and an actual access path cost, if one exists is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

The Examiner believes paragraphs [0026]—[0030] and FIGS. 7-8 provide the essential features not presented in claims 1, 15, and 28.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 15, 28, and 42-56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The examiner is unable to determine how selecting is based on a stored actual request element cost; during processing, one or actual request element cost(s) are produced; and storing the one or more actual request element cost is performed. Are the actual request element costs stored twice? How are the actual request element costs produced or retrieved after they've already been created?

As per claims 42-56, the claim language is directed to a system, however, it appears that the applicant is claiming a method.

### *Claim Rejections - 35 USC § 101*

35 U.S.C. § 101 reads as follows:

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement

thereof, may obtain a patent therefore, subject to the conditions and requirements of this title".

3. Claims 42-56 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

35 USC 101 requires that in order to be patentable the invention must be a "new and useful process, machine, manufacture, *or* composition of matter, *or* any new and useful improvement thereof" (emphasis added). Applicant's claims mentioned above are intended to embrace or overlap *two* different statutory classes of invention as set forth in 35 USC 101. The claims begin by discussing a system (ex. preamble of claim 42), the body of the claim discusses the specifics of the computer system, and subsequently the claim then deals with the specifics of a method (the steps/processes) executed by the system (see above rejection of claims under 35 USC 112, second paragraph, for specific details regarding this issue). "A claim of this type is precluded by the express language of 35 USC 101 which is drafted so as to set forth the statutory classes of invention in the alternative only", Ex parte Lyell (17 USPQ2d 1548).

***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1, 15, 28, and 42 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 12, and 23 of copending Application No. 11/328,702.

As per claims 1, 12, and 23 of copending application 11/328,702, although the conflicting claims are not identical, they are not patentably distinct from each other because they are an obvious variation to the present application claims. Although the conflicting claims are not identical, they are not patentably distinct from each other because the present application contains obvious variant recitations which are obvious variations of the patented invention features since both comparisons perform the same function, in the same way with the same result.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

**Claims 1, 12, and 23, respectively, of Application No. 11/328,702 recite:**

**Claim 1:**

A method for optimizing processing of a request, the request having one or more predicates, the method including:

creating a list of the one or more predicates in the request;

pruning from the list the predicates for which an actual cost has not been stored or for which a cost cannot be estimated;

selecting an access path for the each of the predicates;

processing the request using the selected access paths, producing one or more actual predicate costs; and

storing the one or more actual predicate costs.

**Claim 12:**

A computer program, stored on a tangible storage medium, for use in optimizing processing of a request, the request having one or more predicates, the program including executable instructions that cause a computer to:

create a list of the one or more predicates in the request;

prune from the list the predicates for which an actual cost has not been stored or for which a cost cannot be estimated;

select an access path for the each of the predicates;

process the request using the selected access paths, producing one or more actual predicate costs; and

store the one or more actual predicate costs.

**Claim 23:**

A database system including:

a massively parallel processing system including: one or more nodes; a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs;

a plurality of data storage facilities, each of the one or more CPUs providing access to one or more data storage facilities;

a process for optimizing processing of a request, the request having one or more predicates, the process including:

creating a list of the one or more predicates in the request;

pruning from the list the predicates for which an actual cost has not been stored or for which a cost cannot be estimated;

selecting an access path for the each of the predicates;

processing the request using the selected access paths, producing one or more actual predicate costs; and

storing the one or more actual predicate costs.

**Claims 1, 15, 28, and 42, respectively, of Application No. 10/730,629 recite:**

**Claim 1:**

A method for optimizing processing of a request, the request having elements, the method including:

selecting an access path for the request taking into consideration a stored actual request element cost;

processing the request using the selected access path, producing one or more

actual request element costs; and

storing the one or more actual request element costs.

**Claim 15:**

A method for optimizing processing of a workload group, the workload group including one or more requests, each request having elements, the method including:

selecting an access path for a request taking into consideration a stored actual request element cost, categorized by workload group;

processing the request using the selected access path, producing one or more actual request element costs; and

storing the one or more actual request element costs, categorized by workload group.

**Claim 28:**

A computer program, stored on a tangible storage medium, for use in optimizing processing of a request, the request having elements, the program including executable instructions that cause a computer to:

select an access path for the request taking into consideration a stored actual request element cost;

process the request using the selected access path, producing one or more actual request element costs; and

store the one or more actual request element costs.

**Claim 42:**

A database system including:

a massively parallel processing system including: one or more nodes; a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs;

a plurality of data storage facilities each of the one or more CPUs providing access to one or more data storage facilities;

a process for execution on the massively parallel processing system for optimizing processing of a request, the request having elements, the process including:

selecting an access path for the request taking into consideration a stored actual request element cost;

processing the request using the selected access path, producing one or more actual request element costs; and

storing the one or more actual request element costs.

***Conclusion***

5. The examiner has cited prior art of interest, for example:

1) Shimbaya et al. (US Patent Number 4,956,774), which discloses a data base optimizer using most frequency values statistics.

2) Hara et al. (US Patent Number 6,349,305), which discloses a method and system for database processing by invoking a function related to index type definition, generating an execution plan based on index type name.

3) Hrle (US PG Pub. 2004/0093332), which disclose a method and system for reducing host variable impact on access path selection.

4) Lenzie (Patent Number 6,182,079), which discloses specifying indexes by evaluating costs savings for improving operation in relational databases.

5) Hartsell et al. (US PG Pub. 2003/0236745), systems and methods for billing in information management environments.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freda A. Nelson whose telephone number is (571) 272-7076. The examiner can normally be reached on Monday - Friday, 10:00AM -6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hayes can be reached on 571-272-6708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FAN 05/11/2007

Freda Nelson

THOMAS A. DIXON
PRIMARY EXAMINER